Selection Statement for the NASA ICESat-2 Mission Flight Laser Systems Acquisition
RFP NNG10338284R

On May 6 and 12, 2011, I, along with senior officials from Goddard Space Flight Center (GSFC) met with the Integrated Evaluation Team (IET) appointed to evaluate proposals in connection with the NASA ICESat-2 Mission Flight Laser Systems Acquisition.

Procurement Description

The purpose of the NASA ICESat-2 Mission Flight Laser Systems Acquisition is to obtain the flight laser systems for the ICESat-2 Mission. ICESat-2 will use precision laser-ranging techniques to measure the topography of the Greenland and Antarctic ice sheets and the thickness characteristics of Arctic and Antarctic sea ice. According to the National Research Council's Decadal Survey on Earth Science and Applications from Space, the mission will fill an urgent need in understanding the Earth's rapidly changing ice cover. Work will be performed at the Offeror's facility. This includes the design, development, fabrication, test, and delivery of the ICESat-2 Space Flight Laser Systems. Laser deliveries include one (1) integration and test laser (ITL) and four (4) flight laser systems. These systems consist of the optical, electrical, mechanical, material, wire harnessing, thermal control, flight software, flight firmware, and support equipment. The four (4) flight lasers include the following: a) one flight qualification laser, b) two lasers for the flight instrument; and c) a one flight spare laser.

The NASA ICESat-2 Mission Flight Laser Systems Acquisition Request-for-Proposal (RFP) was released on November 29, 2010 after 3 months of a limited-draft RFP question period.

Three (3) amendments were issued to the RFP. Amendment Numbers one through three answered questions from industry on the RFP and made corresponding RFP revisions.

The contract will be a Cost Plus Award Fee contract with a period of performance of contract award through launch plus 38 months.

This procurement was conducted as a full and open competition in accordance with FAR Part 15.3, entitled “Source Selection.”

Proposals Submitted

On January 31, 2011, NASA received proposals from the following four (4) companies:

Raytheon Company, Space and Airborne Systems (“Raytheon”)
Northrop Grumman Systems Corporation, Aerospace Systems (“Northrop”)
Fibertek, Inc. (“Fibertek”)
Lockheed Martin Coherent Technologies (“Lockheed”)

Evaluation Procedures and Summary Results

The IET evaluated proposals in accordance with the procedures prescribed in FAR Part 15, NASA FAR Supplement (NFS) Part 1815, and the RFP evaluation criteria. The RFP listed three evaluation factors: Mission Suitability, Cost, and Past Performance. The RFP specified the relative order of importance of these factors as follows:

> The Cost Factor is significantly less important than the combined importance of the Mission Suitability Factor and the Past Performance Factor. As individual Factors, the Mission Suitability Factor is the most important and the Past Performance is more important than the Cost Factor.

Mission Suitability has three Subfactors as follows: Technical Approach; Small Business Utilization; and Safety and Health Plan. The following weights identified with each subfactor were used to allocate the 1000 total available points:

Subfactor A	Technical Approach	950
Subfactor B	Small Business Utilization	25
Subfactor C	Safety and Health Plan	25
	TOTAL:	1000

The applicable adjectival ratings for each subfactor were "Excellent," "Very Good," "Good," "Fair," and "Poor" as set forth and described in NFS 1815.305(a)(3)(A) (as referenced in Section M of the RFP). In accordance with NFS 1815.304-70(b)(1), the IET did not assign an overall adjectival rating to proposals under the Mission Suitability factor.

The proposed costs were evaluated for cost realism and reasonableness in accordance with FAR 15.305(a)(1) and NFS 1815.305(a)(1)(B), in order to determine the offeror's probable cost. Adjustments were made to the proposed cost to reflect the probable cost to the government. The cost confidence determination was made for the probable cost assessment for each proposal. Cost confidence was expressed as a "High," "Medium," or "Low" rating.

Past Performance evaluations were conducted in accordance with provisions M.4 of the solicitation. As stated in provision L.18, the past performance record indicates relevant quantitative and qualitative aspects of delivering products similar in size, content, and/or complexity to the requirements of this acquisition. Past Performance information sources included: offeror provided past performance information, offeror's customer provided past performance questionnaires, information from government past performance databases, and interviews with the offeror's customers.

As a result of the evaluation process, the final IET adjectival ratings are summarized below:

Offeror	Technical Approach	Small Business Utilization	Safety and Health Plan	Probable Cost Confidence	Past Performance
Raytheon	Fair	Good	Good	Medium	Low
Northrop	Very Good	Good	Good	Medium	Moderate
Fibertek	Excellent	Excellent	Good	High	High
Lockheed	Good	Good	Good	High	Moderate

Detailed Results of the Evaluation

Raytheon

Under the Mission Suitability Factor, Raytheon received no significant strengths, six (6) strengths, six (6) weaknesses, four (4) significant weaknesses and no deficiencies.

Under the Technical Approach subfactor, Raytheon's proposal received an adjectival rating of *Fair*. Raytheon received no significant strengths, three (3) strengths, four (4) weaknesses, four (4) significant weaknesses and no deficiencies.

STRENGTH #1: OPTICAL BENCH ASSEMBLY (OBA) TEST RISK REDUCTION

The Offeror's approach to OBA thermal testing for optical alignment screening enhances the potential for successful contract performance. This reduces the risk to schedule and cost due to late discovery of thermal stress induced optic misalignment. The Offeror approach to thermal survival testing enhances the potential for successful contract performance.

STRENGTH #2: NARROW SPECTRAL LINE-WIDTH

Spectral line-width exceeds RFP requirements (narrower than specified) and contributes toward exceeding the RFP requirements in a manner that provides additional value to the government. This enables system engineering margin at the instrument level to accommodate laser-to-laser wavelength variation within the instrument receiver subsystem (etalon). Also this means higher transmission through the etalon which increases the measurement efficiency and creates margin. This flexibility contributes to exceeding the RFP requirements in a manner that provides additional value to the government.

STRENGTH #3: THIRD PARTY REGISTERED TO AS9100

The RFP mission assurance requirement is for compliance with the AS9100 standard. The Offeror possesses a Registration Certificate issued by a 3rd party Registrar which enhances the potential for successful performance. This independent verification and auditing reduces risk to the government that a quality issue will impact contract cost and schedule.

WEAKNESS #1: THERMAL DESIGN DOES NOT MEET RFP REQUIREMENTS

Baseline thermal design concept does not meet the RFP requirements which increases the risk of unsuccessful contract performance. Additional cost and schedule may be needed to modify the thermal design to comply with the RFP requirements.

WEAKNESS #2: OFFEROR PROPOSES A NON-FLIGHT-QUALIFIED FPGA FOR THE CONTROL ELECTRONICS

Offeror proposes a non-flight-qualified Field Programmable Gate Array (FPGA) which increases the risk of unsuccessful contract performance. The schedule and cost may be impacted by the FPGA qualification process.

WEAKNESS #3: INCORRECT CYCLE COUNT ON SN01 QUALIFICATION TESTING

Offeror does not plan to test to the RFP thermal cycle count on the first laser unit (SN01) which increases the risk of unsuccessful contract performance.

WEAKNESS #4: OFFEROR DOES NOT ADEQUATELY ADDRESS SOME SMA REQUIREMENTS

Offeror does not explicitly address some RFP safety and mission assurance (SMA) requirements increasing the risk of unsuccessful contract performance.

SIGNIFICANT WEAKNESS #1: INCOMPLETE DEMONSTRATION OF TECHNICAL COMPLIANCE WITH RFP LASER PERFORMANCE REQUIREMENTS

Proposal lacks evidence of compliance with many RFP laser technical requirements which appreciably increases the risk of unsuccessful contract performance.

SIGNIFICANT WEAKNESS #2: INSUFFICIENT RISK MANAGEMENT APPROACH: LIKELIHOOD OF OCCURRENCE THAT OPTIC COATINGS FAIL TO MEET QUALITY AND LASER DAMAGE REQUIREMENTS.

Offeror's plans to mitigate the risk of optical coating failures do not adequately address the potential for laser damage and/or cost and schedule impacts. This flaw in the proposal appreciably increases the risk of unsuccessful contract performance.

SIGNIFICANT WEAKNESS #3: SYSTEM DESIGN PERFORMANCE WILL NOT BE VERIFIED UNTIL SN01 LASER TESTING WHILE FLIGHT UNITS (2, 3, & 4) ARE IN ASSEMBLY, INTEGRATION AND TEST

Offeror plans the first complete verification of laser system design with the environmental testing of the first flight laser (SN01). This approach appreciably increases the risk of unsuccessful contract performance.

SIGNIFICANT WEAKNESS #4: NO VIABLE PLAN TO ACHIEVE TRL-6 PER THE RFP DEFINITION

Offeror does not provide sufficient data and justification that the Flight Laser System (FLS) meets the RFP definition of Technology Readiness Level 6 (TRL-6) (ICESAT-2-LAS-TN-0173, Rev. A), which indicates a lower system design maturity. In addition, the Offeror does not provide a plan to achieve TRL-6 per the RFP's definition. The combination of these factors appreciably increases the risk of unsuccessful contract performance.

Under the Small Business (SB) Utilization subfactor, Raytheon's proposal received an adjectival rating of *Good*. Raytheon received no significant strengths, two (2) strengths, one (1) weakness, no significant weaknesses and no deficiencies.

STRENGTH #1: SMALL BUSINESS SUBCONTRACTING PLAN

Offeror Small Business Subcontracting Plan exceeds the RFP small business subcontracting goals in a manner that provides additional value to the government.

STRENGTH #2: COMMITMENT TO SMALL BUSINESS

Offeror allocation of subcontracting funds to small businesses exceeds the RFP small business subcontracting goals in a manner that provides additional value to the government.

WEAKNESS #1: SMALL DISADVANTAGED BUSINESS PARTICIPATION – CONTRACT TARGETS

Offeror's small disadvantaged business funding targets do not meet RFP requirements which increases the risk of unsuccessful contract performance in the area of small business utilization.

Under the Safety and Health Plan subfactor, Raytheon's proposal received an adjectival rating of *Good*. Raytheon received no significant strengths, one (1) strength, one (1) weakness, no significant weaknesses and no deficiencies.

STRENGTH #1: VOLUNTARY PROTECTION PROGRAM (VPP) CERTIFIED

Independent VPP certification of Offeror facilities from California's Division of Occupational Safety and Health exceeds RFP requirements for safety and health plans, and enhances the potential for successful contract performance.

WEAKNESS #1: LACK OF PLANS FOR TIMELY NOTIFICATION OF MISHAPS AND CLOSE CALLS

Offeror's proposal lacks provisions for the timely government notification related to mishaps and close calls which increases the risk of unsuccessful contract performance.

Under the Cost Factor, Raytheon's proposed and probable cost was the second highest of the four proposals in the competition. The probable cost of this offer received a *Medium* probable cost confidence rating. The RFP requirements are for a discrete space flight hardware box (laser) while the Raytheon cost basis of estimates were constructed using large space flight instrument builds and a mixture of Raytheon cost models. Therefore the IET made no adjustments to the cost estimate. The indirect and direct rates were verified based on Defense Contract Audit Agency (DCAA) audit. The IET has a medium level of confidence that the probable cost correlates very closely to the actual costs the Offeror would incur to successfully implement its proposal.

Under the Past Performance Factor, the Offeror received a *Low* confidence rating that the Offeror will successfully perform the required effort. The IET considered a total of eight (8) past performance references for the prime and significant subcontractors. The degree of relevancy ranged from mostly pertinent to one (1) very highly pertinent. Therefore, overall Raytheon's past performance was

considered relevant to this acquisition. Based on the past performance references the Raytheon Team's overall performance for the prime and significant subcontractor ratings were predominantly very low to moderate, with a few high ratings. Specifically cost received predominantly very low ratings (3) and low ratings (1) with (2) moderates ratings, while schedule received mainly low and moderate ratings with only one high rating. Technically Raytheon received a mixture of high (3) and moderate ratings (3) with one low rating. The very low cost ratings and low schedule ratings outweighted the moderate and higher ratings in technical. Therefore, the IET has a low level of confidence that Raytheon will perform the required effort successfully, within the cost and schedule constraints of this procurement.

NORTHROP

Under the Mission Suitability Factor, Northrop received one (1) significant strength, nine (9) strengths, five (5) weaknesses, no significant weaknesses and no deficiencies.

Under the Technical Approach subfactor, Northrop's proposal received an adjectival rating of "Very Good." Northrop received one (1) significant strength, seven (7), strengths, four (4) weaknesses, no significant weaknesses and no deficiencies.

SIGNIFICANT STRENGTH #1: POSITIVE END-OF-LIFE POWER MARGIN

The Offeror's calculated end-of-life (EOL) power margin contributes significantly toward exceeding the RFP requirements in a manner that provides additional value to the government. The additional power margin provides the instrument and mission teams more flexibility in design.

STRENGTH #1: INTEGRATED NETWORK SCHEDULE APPROACH

The Integrated Network Schedule (INS) is proposed to be updated at a frequency exceeding the RFP requirement (monthly). Earlier notification of schedule changes will enable more timely corrective action, exceeding the RFP requirements in a manner that enhances the potential for successful contract performance.

STRENGTH #2: SIMPLE APPROACH TO ADJUSTABLE OUTPUT ENERGY

Offeror's simple approach to meeting required energy adjustability without compromising other laser performance requirements enhances the potential for successful contract performance.

STRENGTH #3: LOW CONTAMINATION RISK DUE TO OFFEROR INTERNAL ARCHITECTURE

Offeror's internal laser architecture decreases the risk of contamination which enhances the potential for successful contract performance.

STRENGTH #4: THIRD PARTY REGISTERED TO AS9100

The RFP mission assurance requirement is for compliance with the AS9100 standard. The Offeror is certified by a 3rd party which enhances the potential for successful performance. This independent verification and auditing reduces risk to the government that a quality issue will impact contract cost and schedule.

STRENGTH #5: ROBUST LASER CONTROLLER WITH SPACEFLIGHT HERITAGE

Robust laser controller with spaceflight heritage and capability margin contributes toward exceeding the RFP requirements in a manner that provides additional value to the government. This unique technical approach adds flexibility to accommodate changes in laser function so there is a greater possibility of meeting schedule and cost estimates in a manner that provides additional value to the government.

STRENGTH #6: LEVERAGING TELECOM DATA FOR RELIABILITY

Utilization of telecommunications (telecom) data increases confidence in Offeror reliability approach and enhances the potential for successful contract performance.

STRENGTH #7: LASER SYSTEM DESIGN ARCHITECTURE IS MODULAR

Laser system design modularity enables forward progress to continue if delays occur in delivery of some modules, which enhances the potential for successful contract performance. The Offeror's design architecture is modular, permitting the use of emulators and functional equivalents to continue testing (forward progress) if any flight modules are delayed. The Offeror's design approach enhances the potential for successful contract performance.

WEAKNESS #1: OFFEROR ARCHITECTURE LIMITS OUTPUT PULSE ENERGY

Offeror peak optical power margin is very small limiting the flexibility to compensate for laser degradation which increases the risk of unsuccessful contract performance.

WEAKNESS #2: CONSEQUENCES OF MASTER OSCILLATOR PERFORMANCE IN OFFEROR ARCHITECTURE

Offeror master oscillator performance increases the risk of unsuccessful contract performance.

WEAKNESS #3: TRL-6 ACHIEVEMENT IS CLAIMED THROUGH MODULAR LEVEL TESTING

The Offeror TRL-6 plan tests environmental performance of laser modules (subsystems) individually rather than at the system as a whole (as required by the RFP definition of TRL-6) which increases the risk of unsuccessful contract performance.

WEAKNESS #4: OFFEROR DOES NOT ADEQUATELY ADDRESS SOME SMA REQUIREMENTS

Offeror does not explicitly address some RFP safety and mission assurance (SMA) requirements increasing the risk of unsuccessful contract performance.

Under the Small Business Utilization subfactor, Northrop's proposal received an adjectival rating of "Good." Northrop received no significant strengths, one (1) strengths, one (1) weakness, no significant weaknesses and no deficiencies.

STRENGTH #1: SMALL BUSINESS SUBCONTRACTING PLAN – OVERALL SB GOALS

Offeror Small Business Subcontracting Plan exceeds the RFP overall small business goals which provides additional value to the government.

WEAKNESS #1: SMALL BUSINESS SUBCONTRACTING PLAN – INDIVIDUAL SUBCONTRACTING GOALS BY CATEGORY

Offeror Small Business Subcontracting Plan does not meet RFP small disadvantaged goals which increases the risk of unsuccessful contract performance in the area of small business utilization.

Under the Safety and Health Plan subfactor, Northrop's proposal received an adjectival rating of "Good." Northrop received no significant strengths, one (1) strength, no weaknesses, no significant weaknesses and no deficiencies.

STRENGTH #1: CONTINUAL PLANNED SAFETY IMPROVEMENTS

Offeror Safety and Health Plan demonstrates that the company is well acquainted with NASA and GSFC directives and procedures and the safety program offers elements of continual improvement that are above and beyond NASA expectations. These elements decrease the chance of a safety problem and enhance the potential for successful contract performance.

Under the Cost Factor, Northrop's proposed and probable cost was the highest of the four proposals. The probable cost of this offer received a *Medium* probable cost confidence rating. The RFP requirements are for a discrete space flight hardware box (laser) while the Northrop cost basis of estimates were constructed using large space flight instrument builds and a significant portion of the Offeror's cost consisted of subcontracts which the IET had no visibility into the cost. The IET made downward adjustments to the cost estimate based on a DCAA rate audit and an upward technical hour adjustment for laser performance modeling. The IET has a medium level of confidence that the probable cost correlates very closely to the actual costs the Offeror would incur to successfully implement its proposal.

Under the Past Performance Factor, the Offeror received a Moderate confidence rating that the Offeror will successfully perform the required effort. The IET considered a total of thirteen (13) past performance references for the prime and significant subcontractors. The degree of relevancy ranged from not relevant to very highly pertinent with (1) very highly pertinent, (2) highly pertinent, (4) pertinent and (5) somewhat pertinent. Therefore, overall Northrop's past performance was considered relevant to this acquisition. For technical, Northrop's Team received (6) very high ratings, (4) high ratings, (1) moderate and (1) low rating. Ratings for schedule ranged from high (4), very high (2), moderate (4), and low (2). Cost ratings were high (3), moderate (2), with low (2) and the others not rated. Therefore, based on Northrop's highly effective technical record in developing space flight hardware, but inconsistent schedule and cost performance record, there is a moderate level of confidence that the Offeror will successfully perform the required effort within the cost and schedule constraints of this procurement.

FIBERTEK

Under the Mission Suitability Factor, Fibertek received four (4) significant strengths, eight (8) strengths, one (1) weakness, no significant weaknesses and no deficiencies.

Under the Technical Approach subfactor, Fibertek's proposal received an adjectival rating of "Excellent." Fibertek received three (3) significant strengths, seven (7) strengths, one (1) weakness, no significant weaknesses and no deficiencies.

SIGNIFICANT STRENGTH #1: EARLY DEVELOPMENT WORK ACHIEVED MATURITY AND FULL SCALE PROTOTYPE

Early development decisions and achievements made by the Offeror to build and demonstrate a mature laser prototype greatly enhance the potential for successful contract performance. The Offeror successfully packaged a prototype laser system demonstrating nearly all ATLAS laser requirements, appreciably increasing the possibility that the contract will successfully meet cost and schedule and greatly enhancing the potential for successful contract performance.

SIGNIFICANT STRENGTH #2: VERTICALLY INTEGRATED QUALIFICATION APPROACH TO SYSTEM QUALIFICATION

Offeror qualifies parts and subassemblies before full-system integration which greatly enhances the potential for successful contract performance. Layered, incremental qualification management approach reduces risk that qualification failure on SN1 will impact the government's schedule. This approach significantly reduces cost and schedule risk of first finding a part or subassembly issue at full-up system level integration.

SIGNIFICANT STRENGTH #3: SYSTEM, SUBSYSTEM LEVEL AND LASER DIODE LIFE-TEST PLANS

The RFP requires delivery of the first flight laser (SN01) which will be life-tested by the government. The Offeror is exceeding the RFP requirements, planning and performing system, subsystem, and critical component testing in addition to the government (SN01) life-testing, providing the government greater confidence in the Offeror's reliability assessment. It also allows for early verification of system performance as well as identification and mitigation of potential technical issues. Therefore, the Offeror's test plans greatly enhance the potential for successful contract performance. This unique approach greatly enhances the potential for successful contract performance.

STRENGTH #1: DETAILED PLAN MITIGATING RISK OF OPTICAL DAMAGE

Offeror's plan and detailed analysis for mitigating optical damage enhances the potential for successful contract performance.

STRENGTH #2: OFFEROR COMPLETED CONTAMINATION CONTROL PLAN BASED ON SPACE FLIGHT HERITAGE

Offeror has successfully developed and delivered the Contamination Control Plan (CCP) for ICESat-2 space flight lasers. This exceeds the RFP requirements in a manner that provides additional value to the government.

STRENGTH #3: MATURE PRESSURE SEAL TECHNOLOGY AND PROCESS

Offeror's laser housing pressure seal approach and process has successfully demonstrated space-flight operation which enhances the potential for successful contract performance.

STRENGTH #4: NO GRAVITY DEPENDENCE FOR ON-GROUND OPERATION

Offeror proposes a design with no gravity dependence, which enhances the potential for successful contract performance. The Offeror's design does not depend on gravity orientation, providing the government flexibility at instrument and spacecraft level testing and therefore simplifying integration and test logistics. This design approach enhances the potential for successful contract performance.

STRENGTH #5: OFFEROR DESIGN VIBRATION MODES OUTSIDE OF GENERAL ENVIRONMENTAL VERIFICATION STANDARD (GEVS) LAUNCH VEHICLE SPECTRUM

Offeror refined the structural design to provide margin against RFP requirement for first mode dynamic response which enhances the potential for successful contract performance. The Offeror's structural analysis and testing exceed the RFP requirement, making the laser more robust and increasing the chance that it will survive launch environments. The robust design also provides the government programmatic flexibility in choosing a launch vehicle and spacecraft. Exceeding the RFP requirement for first mode dynamic response enhances the potential for successful contract performance.

STRENGTH #6: IN-FLIGHT WAVELENGTH ADJUSTMENT

Offeror's architecture has demonstrated adjustable wavelength which exceeds the RFP requirements in a manner that provides additional value to the government. The Offeror's architecture provides the instrument flexibility to adjust the laser wavelength to the receiver filter wavelength on orbit and optimize instrument performance; this exceeds the RFP requirements in a manner that provides additional value to the government.

STRENGTH #7: LASER CONTROLLER UTILIZES VERIFIED FIRMWARE RUNNING ON FLIGHT QUALIFIED FPGAS

Offeror's laser control electronics approach is simple and mature, using flight-qualified Field Programmable Gate Arrays (FPGA), enhancing the potential for successful contract performance.

WEAKNESS #1: OFFEROR DOES NOT ADEQUATELY ADDRESS SOME SMA REQUIREMENTS

Offeror does not explicitly address some RFP safety and mission assurance (SMA) requirements, increasing the risk of unsuccessful contract performance.

Under the Small Business Utilization subfactor, Fibertek's proposal received an adjectival rating of "Excellent." Fibertek received one (1) significant strength, no strengths, no weaknesses, no significant weaknesses and no deficiencies.

SIGNIFICANT STRENGTH #1: SMALL BUSINESS SUBCONTRACTING PLAN

Offeror Small Business Subcontracting Plan greatly enhances the potential for successful performance in the area of small business utilization. The amount of work proposed to be done by small businesses at both the prime and subcontract levels significantly contribute to promoting and integrating small

businesses into the competitive base of contractors that pioneer the future of space exploration and scientific discovery. The Offeror's small business subcontracting plan greatly enhances the potential for successful contract performance.

Under the Safety and Health Plan subfactor, Fibertek's proposal received an adjectival rating of "Good." Fibertek received no significant strengths, one (1) strength, no weaknesses, no significant weaknesses and no deficiencies.

STRENGTH #1: SAFETY & HEALTH PLAN DEMONSTRATES EXPERTISE IN LASER HAZARD MITIGATION

The Offeror's Safety and Health Plan demonstrates expertise in laser hazard mitigation which decreases the chance of a mishap and enhances the potential for successful contract performance.

Under the Cost Factor, Fibertek's proposed and probable cost was the lowest of the four proposals. The probable cost of this offer received a *High* probable cost confidence rating. Fibertek utilized basis-of-estimates from actual builds which closely resemble the government requirement for a discrete space flight hardware box (laser). Fibertek and their significant subcontractor utilized Bill of Materials (BOMs) for cost basis of estimate development which provided the IET confidence in the cost estimate. However, the IET made downward adjustments to the cost estimate based on a DCAA rate audit (Fibertek and significant subcontractor) and technical hour adjustments (increasing hours) for optics processing and post delivery support (removed). The IET has a high level of confidence that the probable cost correlates very closely to the actual costs the Offeror would incur to successfully implement its proposal.

Under the Past Performance Factor, the Offeror received a High confidence rating that the Offeror will successfully perform the required effort. The IET considered a total of twelve (12) past performance references for the prime and significant subcontractors. The degree of relevancy ranged from a total of (6) very highly & highly pertinent, to pertinent (3), and somewhat pertinent (3). Therefore, overall Fibertek's past performance was considered relevant to this acquisition. Based on the past performance references the Fibertek Team's overall technical ratings for the prime and significant subcontractor references ranged from high (7), very high (3) to moderate (2). Cost received (3) very high, (3) high, (3) moderates, (2) low and one not rated. Regarding schedule, Fibertek received (5) high, (1) very high, and (6) moderate. Therefore, based on Fibertek's highly pertinent past performance, highly effective technical record in space flight laser development, and its' scheduling and cost record, there is a high level of confidence that this Offeror will successfully perform the required effort.

LOCKHEED

Under the Mission Suitability Factor, Lockheed received no significant strengths, eight (8) strengths, four (4) weaknesses, no significant weaknesses and no deficiencies.

Under the Technical Approach subfactor, Lockheed's proposal received an adjectival rating of "Good." Lockheed received no significant strengths, seven (7) strengths, four (4) weaknesses, no significant weaknesses and no deficiencies.

STRENGTH #1: ENCOURAGING OPEN AND TRANSPARENT COMMUNICATIONS

Offeror's approach to open and transparent communication enhances the potential for successful contract performance

STRENGTH #2: LASER DESIGN BASED ON TRL-6 HERITAGE SYSTEM

Previously proven TRL-6 design elements from the Offeror's TRL-6 heritage system enhance the potential for successful contract performance.

STRENGTH #3: BAKE-OUT SURVIVAL THERMAL CYCLING

Offeror survival thermal cycling decreases the risk of misalignment or mechanical drift and enhances the potential for successful contract performance

STRENGTH #4: MATERIAL AND OPTICS SCREENING PROCESS

Offeror Material and Optic (MO) approach to screening and testing decreases the chance that a defective optic is integrated into the laser system. This increases the chance that the laser will perform properly and that the laser will not need to be re-worked nor require cost or schedule overruns. This enhances the potential for successful contract performance.

STRENGTH #5: 3RD PARTY CERTIFIED TO AS9100

The RFP mission assurance requirement is for compliance with the AS9100 standard. The Offeror is third party certified to AS9100 which enhances the potential for successful performance. This independent verification and auditing reduces risk to the government that a quality issue will impact contract cost and schedule.

STRENGTH #6: NARROW SPECTRAL LINE-WIDTH AND CENTER WAVELENGTH CONTROL

Spectral line-width and Center wavelength control contributes in a manner that provides additional value to the government. The Offeror system spectral line-width performance flexibility contributes in a manner that provides additional value to the government.

STRENGTH #7: WORK INSTRUCTION MATURITY

Offeror laser processes (work instructions, inspection guiding documents, allowable material lists, and production processes) are matured through previous laser work & TRL-6 heritage system development which enhances the potential for successful contract performance.

WEAKNESS #1: OFFEROR DOES NOT ADEQUATELY ADDRESS PULSE ENERGY REQUIREMENTS

Offeror does not meet the RFP definition of energy & wall-plug efficiency (WPE) which increases the risk of unsuccessful contract performance. The Offeror redefines the RFP requirement for laser energy. There is a possibility that instrument system technical resources may be consumed to meet the instrument system performance requirements and therefore increases the risk of unsuccessful contract performance.

WEAKNESS #2: CONFUSING ACCOUNTABILITY IN ENGINEERING & SMA LEADERSHIP

Offeror presents several organization charts with Safety and Mission Assurance (SMA) and Engineering reporting to different functional leads which increases the risk of unsuccessful contract performance.

WEAKNESS #3: OFFEROR APPROACH TO LASER PUMPING LEADS TO SCHEDULE AND COST RISK

Offeror approach to laser pumping increases the risk of unsuccessful contract performance. The Offeror proposes an approach to laser pumping not previously utilized. This increases the risk of not achieving TRL-6 by the RFP required timeline with subsequent schedule and cost growth. Therefore, the lack of maturity of the proposed laser pumping scheme increases the risk of unsuccessful contract performance.

WEAKNESS #4: OFFEROR DOES NOT ADEQUATELY ADDRESS SOME SMA REQUIREMENTS

Offeror does not explicitly address some RFP safety and mission assurance (SMA) requirements increasing the risk of unsuccessful contract performance.

Under the Small Business Utilization subfactor, Lockheed's proposal received an adjectival rating of "Good." Lockheed received no significant strengths, one (1) strength, no weaknesses, no significant weaknesses and no deficiencies.

STRENGTH #1: COMMITMENT TO SMALL BUSINESS

Offeror's demonstrated participation and support of the Mentor Protégé Program enhances the potential for successful performance in the area of small business utilization.

Under the Safety and Health Plan subfactor, Lockheed's proposal received an adjectival rating of "Good." Lockheed received no significant strengths, no strengths, no weaknesses, no significant weaknesses and no deficiencies.

Under the Cost Factor, Lockheed's proposed and probable cost was the second lowest of the four proposals. The probable cost of this offer received a *High* probable cost confidence rating. Lockheed utilized basis-of-estimates from actual builds which closely resemble the government requirement for a discrete space flight hardware box (laser). Lockheed utilized a detailed material list for cost basis of estimate development which provided the IET confidence in the cost estimate. The IET made adjustments (slight increase & decrease) to the cost estimate based on a DCAA rate audit and technical hour adjustments (upward) for FPGA development, contamination control engineering and post delivery support (removed). The IET has a high level of confidence that the probable cost correlates very closely to the actual costs the Offeror would incur to successfully implement its proposal.

Under the Past Performance Factor, the Offeror received a Moderate confidence rating that the Offeror will successfully perform the required effort. The IET considered a total of thirteen (13) past performance references for the prime and significant subcontractors. The degree of relevancy ranged from (6) pertinent, (4) somewhat pertinent, (1) very high pertinent, and (2) not rated. Therefore, overall Lockheed's past performance was considered relevant to this acquisition. Lockheed's Team received lower ratings in schedule with (4) moderates, (2) low, and only (3) highs and (2) very high, one was not

rated. In cost Lockheed received lower ratings as well with (5) moderates, (1) very low, (3) not rated and only (2) very high and (2) high ratings. The very high ratings for schedule and cost were only somewhat pertinent to the RFP content. Lockheed did well in technical ratings receiving (6) very high, (4) high, and only (1) low and (2) not rated. Therefore, based on the Lockheed's highly effective technical record in developing space flight hardware, but inconsistent schedule and cost performance record, there is a moderate level of confidence that the Offeror will successfully perform the required effort within the cost and schedule constraints of this procurement.

Source Selection Decision

I carefully reviewed the Integrated Evaluation Team's documentation entitled "ICESat-2 Flight Laser System Acquisition Presentation to Source Selection Authority", dated May 6 and May 12. At the May 6, 2011 briefing, I questioned the SEB with regard to its rationale for the findings, the adjectival ratings, and point scores under mission suitability subfactors, past performance and cost. Further, I solicited the views of my ex-officio advisors in their areas of expertise. The IET addressed the questions in its documentation and follow up presentation on May 12, 2011. I determined that the findings presented by the IET, as documented in its Report, were detailed, consistent with the evaluation criteria in the RFP, and provided a clear description of the merits of each proposal. Further, I determined that the findings were reasonable and valid for purposes of making a selection decision. I accept the final findings from the IET and concur with the Contracting Officer that discussions are not necessary. In determining which proposal offered the best value to NASA, I referred to the relative order of importance of the three evaluation factors as specified in the RFP:

> The Cost Factor is significantly less important than the combined importance of the Mission Suitability Factor and the Past Performance Factor. As individual Factors, the Mission Suitability Factor is the most important and the Past Performance is more important that the Cost Factor.

Finally, I carefully considered the findings in relation to the evaluation criteria in the RFP, and exercised my independent judgment regarding the significance of the findings as discriminators between the proposals in accordance with the evaluation criteria in the RFP.

Regarding the Mission Suitability Factor, I noted that Fibertek's proposal received the highest Mission Suitability score; followed by Northrop; Lockheed; and then Raytheon.

Comparing the proposals under subfactor A, Technical Approach Subfactor, the most heavily weighted subfactor with 950 possible points, Fibertek's proposal received an "Excellent" adjectival rating resulting from 3 significant strengths, 7 strengths, and 1 weakness. Northrop received a very good adjectival rating, resulting from 1 significant strength, 7 strengths, and 4 weaknesses. Lockheed received a Good rating resulting from 7 strengths and 4 weaknesses. And, Raytheon received a fair rating resulting from 3 strengths, 4 weaknesses, and 4 significant weaknesses. Specifically, I found that Fibertek's proposal was significantly strong and distinguished itself over the other offerors in the following areas: design maturity of full scale prototype, qualification approach, and subsystem-level and laser diode life test plans. I noted that Fibertek had a weakness for not explicitly addressing some RFP safety and mission assurance requirements but found this not to be a discriminator because all offeror's

received a similar weakness. Northrop's proposal received an adjectival rating of "Very Good" while receiving a significant strength for their proposed positive end-of-life power margin. However, I noted a selection discriminator between the Northrop proposal and the Fibertek proposal. Specifically, Northrop's proposal received weaknesses for its peak optical power margin, master oscillator performance, and TRL-6 achievement through modular level testing. Whereas, the Fibertek proposal did not. Regarding Lockheed's proposal, it received an adjectival rating of "Good" which was a reasonably sound technical response. However, no significant strengths were noted for Lockheed unlike Fibertek and Northrop. I determined that the Raytheon proposal's lower adjectival rating of "Fair" and my assessment of the multiple significant weaknesses made them much less competitive for selection.

Comparing the proposals under Subfactor B, Small Business Utilization Subfactor, I noted a selection discriminator in that Fibertek was the only offeror to receive a significant strength, for the amount of work to be performed by small businesses at the prime and subcontracting level, and the only offeror to receive an adjectival rating of "Excellent." The other offeror's received "Good" ratings.

Under the Safety and Health Subfactor, I found no distinguishing features or selection discriminators as all offeror's received "Good" ratings.

Based on the above, I concluded that Fibertek's proposal had a clear advantage over the other three proposals in the Mission Suitability Subfactor.

The IET's evaluation of Past performance resulted in Fibertek receiving a "high level of confidence" rating, Northrop receiving a "moderate level of confidence", Lockheed receiving a "moderate level of confidence," and Raytheon receiving a "low level of confidence" rating. I concluded that Fibertek's past performance was highly relevant and that their overall performance ratings were predominantly high to very high.

Regarding the Cost Factor, the least important Factor, I examined the rationale for adjustments made in determining probable cost and concurred with the IET's findings including the level of confidence in the probable cost adjustments, if any. I questioned the IET carefully in order to understand why cost adjustments to the proposed costs were considered necessary and I agreed with the adjustments that were made.

Northrop proposed the highest cost of the four proposals and had the highest probable cost. As a result of the cost evaluation, adjustments were made. The IET assessed a level of confidence of "medium" to the probable cost and I agreed with this assessment.

Raytheon proposed the second highest cost and had the second highest probable costs. As a result of the cost evaluation, no adjustments were made. The IET assessed a level of confidence of "medium" to the probable cost and I agreed with this assessment.

Lockheed proposed the third highest cost and had the third highest probable cost. As a result of the cost evaluation, adjustments were made. The IET assessed a level of confidence of "high" to the probable cost and I agreed with this assessment.

Fibertek proposed the lowest cost and had the lowest probable cost. As a result of the cost evaluation, adjustments were made. The IET assessed a level of confidence of "high" to the probable cost and I agreed with this assessment.

Thus, based on the analysis provided by the IET, I noted that Fibertek had the lowest cost (both proposed and probable) and that the IET assigned a "high" level of confidence. I concurred in this assessment.

Based on the foregoing and upon consideration of the three evaluation factors, I determined that one offeror, Fibertek, presented an overall superior proposal that offered the best value to the Government. Fibertek's significantly higher Mission Suitability Factor rating, the most important selection factor, was a major selection discriminator in my decision. Notably, Fibertek's proposal was the only proposal to receive an "Excellent" rating in the Technical Approach and Small Business Utilization Subfactors. Further, Fibertek was the highest rated proposal in past performance receiving a "high level of confidence" rating. Finally, I noted that Fibertek's proposal offered the lowest probable cost with a "high" level of cost confidence. Therefore, I select Fibertek for award of the ICESat-2 Mission Flight Laser Systems contract.

Original signed on 5/25/2011

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George Morrow Date
ICESat-2 Laser Source Selection Authority